

2 providing the watermark value to an authenticating entity that authenticates the
3 watermarked code.

1 7. The method set forth in claim 2 further comprising the step of:
2 providing the key to the authenticating entity.

1 8. The method set forth in claim 1 wherein:
2 the sequence of executable instructions is modified such that when the sequence of
3 executable instructions is executed, execution state is produced which has a property that
4 depends on the key.

1 9. The method set forth in claim 8 wherein:
2 the execution state is a stack depth graph.

1 10. The method set forth in claim 9 wherein:
2 the execution state is output from the execution.

1 11. The method set forth in claim 10 wherein:
2 the property is an order of elements in the output.

1 12. The method set forth in claim 10 wherein:
2 the property is an additional element in the output.

1 13. The method set forth in claim 10 wherein:
2 the property is a class of an element in the output.

1 14. The method set forth in claim 10 wherein:
2 the property is a constraint that is satisfied by elements of the output.

1 15. The method set forth in claim 8 further comprising the step of:
2 providing a description of the produced execution state to an authenticating entity that
3 authenticates the watermarked code.

1 16. The method set forth in claim 15 further comprising the step of:
2 providing the key to the authenticating entity.

1 17. The method set forth in claim 1 further comprising the step of
2 providing the key to an authenticating entity.

1 17. A method of authenticating a watermarked sequence of executable instructions, the
2 watermark having been produced by modifying the sequence according to a key such that
3 certain of the instructions in the sequence represent a watermark value,
4 the method comprising the steps of:
5 receiving the watermarked sequence or a copy thereof;
6 using the key to locate the certain instructions in the received sequence and read the
7 watermark value; and
8 using the watermark value to determine whether the received sequence is authentic.

1 18. The method of authenticating set forth in claim 17, the method further comprising the step
2 of:
3 receiving another watermark value; and
4 in the step of using the watermark value to determine whether the received sequence is
5 authentic, the watermark value is compared to the other watermark value.

1 19. The method of authenticating set forth in claim 18, the method further comprising the step
2 of:
3 receiving the key.

1 20. A method of authenticating a watermarked sequence of executable instructions, the
2 watermark having been produced by modifying the sequence according to a key such that
3 when the sequence is executed, execution state is produced,
4 the method comprising the steps of:
5 receiving a description of the execution state; and
6 authenticating the watermarked sequence by confirming that the received description
7 describes execution state produced by an execution of the sequence.

1 **21.** The method set forth in claim 20 further comprising the step of:

2 receiving another description of the execution state, the other description describing
3 execution state produced by the execution of the sequence; and
4 in the step of authenticating, comparing the description and the other description.
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1 **22.** The method set forth in claim 21 wherein:

2 the other description is a stack depth graph.

1 **23.** The method set forth in claim 20 wherein the execution state is output from the execution,
2 the output having a property which can be determined using the key and
3 the method further comprises the steps of:

4 receiving the output from the execution; and
5 the step of authenticating includes the steps of
6 receiving the execution state;
7 employing the key to determine the property; and
8 comparing the determined property with the received description.

1 **24.** The method set forth in claim 23 wherein:

2 the determined property is an order of elements in the output.

1 **25.** The method set forth in claim 23 wherein:

2 the determined property is an additional element in the output.

1 **26.** The method set forth in claim 23 wherein:

2 the determined property is a class of an element in the output.

1 **27.** The method set forth in claim 23 wherein:

2 the determined property is a constraint that is satisfied by elements of the output.